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ABSTRACT

Systematic investigation of processes involved in needs analysis would improve current knowledge of the procedure and would bring analysts closer to the goal of generalized validity rather than situational validity. This article deals with two phases of the needs assessment process: selecting participants and defining needs and alternatives in terms of characteristics. A methodological approach for classifying participants is presented along with a method for determining intragroup consistency and agreement. Three methods of selecting participants are discussed: selection on the basis of affiliation with reference groups, on the basis of representing the population at large, and on the basis of demographic analysis that identifies significant groups. Actual choice of selection method has depended upon philosophical preference; for selection to be based upon more objective criteria a common unit of measurement must be identified. The author presents the concept of a numerical rating scale employing criteria for weighting intragroup consistency and agreement for participant selection. (MD)

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INTRAGROUP INCONSISTENCY
In
PUBLIC POLICY ANALYSIS

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Intragroup Inconsistency in Public Policy Analysis

Policymakers in various public service areas frequently employ rating scales to assess needs and to provide for alternatives. The results of these efforts may be used in defining controversial issues, changing policies, and formulating program decision strategies. In the field of education, for example, needs analysis has for a long time been an important phase of planning and evaluating programs (Witkin, 1977). A need is the measure of the difference between an existing issue and the requirements for resolution of that issue. Since issues are controversial public problems for which relief is sought (Jones, 1977), all actions directed toward resolving an issue are or should be guided by policy. Therefore, policies on public education, housing, environment, and health, for example, may result indirectly or directly from a formal needs analysis.

From this supposition the question arises, "Just where does the needs analysis fit into the total process of policy development?" As a beginning point, the five general phases in the policy process should be noted. These include:

Issue awareness

Problem definition

Policy formulation

Policy implementation

Policy impact

Conceptualization and measurement of needs usually transpire in the first three phases of the process outlined above. Although as

Policies are implemented and external impacts cause new issues, the last two phases may also become components that require needs analysis.

Even though many variations and semantic differences exist in the literature concerning needs analysis, all needs assessment techniques appear to have been derived from a basic schemata that actually consists of four steps (Miles, 1979). The first step involves establishing goals which reflect a desirable level of functioning for the program or organization under consideration. Secondly, evaluation of the program or organization's current level of functioning is required with respect to the pre-established goals. The third step consists of a discrepancy analysis based on any differences detected between the desired state (step 1) and the actual state (step 2). Finally, the fourth step requires a prioritization of the expected outcomes for the purpose of administrative action. When these four steps are taken from the traditional needs assessment setting and applied to the policy process, steps one and two deal with values and perceptions about issues instead of goals. Steps three and four involve a procedure for rating the magnitude of alternative needs. The ranking procedure used in the needs assessment may do more than provide a tentative comparison of alternatives. The strongest recommendation could be that certain alternatives should actually receive priority in further exploration and investigation (Quade, 1979). The latter statement is obviously directed toward phases three and four in the policy process.

Information related to procedures for conducting a needs assessment in the applied setting is available from numerous conference proceedings (Travin, 1978, Southard, Note 1) and professional journals. One example includes a constructive criticism of needs assessment (Miles, 1979).

Witkin (Note 2), in another example, presented an evaluation of the needs assessment kits that were commerically available. For those electing practitioner oriented methods, Sarthory (1977) provided guidelines for developing a needs assessment at the local level employing only those resources available within the local public service system.

However, both the literature and conferences have not provided policymakers with adequate examples of empirical evidence concerning the utility or validity of the needs assessment in different policy-making or decision-making schema. Perhaps one reason for the lack of this important empirical evidence can be attributed to the specific validity paradigm most commonly employed for assessing the needs analysis process.

When the topic of validity (Cook and Scioli, 1979) or utility has been addressed in reference to the needs analysis procedures, the general method employed has been a concurrent validity paradigm. This model involves the process of correlating those outcomes obtained from needs assessment with external criteria. While the correlational procedure yields information relative to the covariation among outcomes and external criteria, it does not answer the question of why a relationship does or does not exist. Thus, the results of these correlational procedures are extremely limited. Relevant limitions include the inability to generalize to other settings or increase the current state of knowledge concerning whether or not needs assessment is worthwhile. Consequently, our knowledge of needs assessment techniques may not have increased appreciably in recent years.

In view of the limitations associated with the concurrent validity paradigm, a shift in focus should emerge in the arena of needs assessment.

The impetus should be directed toward examining needs assessment as a process rather than an assessment of situational validity. By better understanding how needs assessment processes operate in a particular setting with a particular program, policy planners would be able to generalize their findings to other settings and other programs. The advantages of a systematic investigation of processes involved in needs analysis would not only improve current scientific knowledge of the procedure but would also bring analysts a step closer to the goal of generalized validity rather than situational validity. An overview of the process would help clarify our position.

Fundamentally, there are four general phases of the needs assessment process: (1) select the participants, (2) establish the issues or characteristics, (3) evaluate the characteristics, and (4) define the policy needs and program alternatives in terms of the characteristics. We shall deal with phases one and four in this article and present a methodological approach for classifying participants. Next, a method for determining intragroup consistency and agreement shall be discussed.

The choice of participants is important for two reasons. First, the participants play a fundamental part in the policy assessment program. Second, the participants provide quantitative and qualitative information concerning the programs under consideration, since this information is the very crux of the entire assessment process. Within this article we shall deal only with the quantitative dimension.

Literature addressing the issue of participants has been devoted almost entirely to methods of participant selection. Sweigert (1971) has suggested that the participants to be chosen for the needs assessment process should be selected on the basis of their affiliation with

reference groups. The basic idea of reference groups was also supported by Witkin (1977), but she expanded the notion to include dissident groups, as well as those groups supportive of the issues or policies to be assessed. Witkin contended that by expanding the definition of reference groups to include both nonsupporters and supporters, those areas of greatest need within the program environment could be more readily identified.

Another approach for selecting participants involves the selection of persons that represent the population at large. Kaufman and English (1979) recommend two different sampling procedures, either of which would yield participants representative of the population at large. One of their suggested procedures is that of a purely random sample in which each person within an identified area has an equal chance of being chosen. The other suggested procedure is that of a stratified random sample in which a proportional cross section of the population at large is identified and sampled. Of the two sampling procedures recommended, their preference is for the stratified approach. They contend that a priori sampling often forces the practitioner to think through procedures and design considerations in more detail and eliminate possible sources of biases rather than attempting to 'doctor' a survey after the fact (Kaufman & English, 1979).

Still another approach for selecting participants to take part in the needs assessment process was developed by Houston and Bain (1979). Their approach entails the development of a demographic analysis which covers a specified geographic area. The purpose of the demographic analysis is to identify significant social, political, and economic groups within the specific geographic area. Once the significant groups have been identified, the formal leader of the groups would be solicited

as participants of the needs assessment process. This basic schemata of identifying significant groups via a demographic analysis was also supported by Kaiser (1973). However, he advocated the inclusion of both formal and informal leaders of the significant groups as participants for the needs assessment process.

These six specific methodologies may be subgrouped into three separate categories. Within each of the three categories the basic selection paradigm for participants can be redefined to extend the basic scope of selection. The three classifications of the basic paradigms and their extensions are presented in Table I. An examination of the table indicates that Sweigert's notion of reference groups includes nonsupporters as well as supporters. Kaufman and English's simple random sampling was refined to a stratified sampling approach. A similar modification can also be observed for Houston and Bain's significant groups where Kaiser advocated the inclusion of informal and formal leaders.

One major implication that can be drawn from the categorization shown in Table I is that any policymaker that initiates an assessment procedure and employs one of the basic selection classifications would obtain a discrete group of participants. Similarly, if one of the extended paradigms were selected, the group of participants obtained would differ from the group of participants obtained by any of the other extended paradigms, while also differing from those selected by the basic paradigm. In the latter situation, the extended paradigm for the reference group and the significant group would include all those participants who would have been selected with the basic paradigm plus an increase of the additional participants identified by the expanded procedure.

TABLE I

THE CLASSIFICATION OF PARTICIPANT SELECTION PARADIGMS

Classification	Basic Paradigm	Extented Paradigm
Reference Group	Supporters	Supporters and Non-supporters
Sampling	Random	Stratified Random
Significant Group	Formal Leaders	Formal and Informal Leaders

Past practices reveal that the actual choice of selection method depends on philosophical preferences rather than empirical evidence which supports the superiority of one approach over another approach. Obviously, the researcher should avoid any procedure that may tend to manipulate results when objectivity is the goal. However, within the domain of public service and education, the taxpaying public has changed the role of the policy planner and administrator. A shift from philosopher to pragmatist must transpire when expenditure of public funds is involved (Tarvin, 1978). In order to meet the requirements of this new role, the policy analyst will need empirical decision rules to justify the choice of a method implemented in participant selection. Increased substantiation will be of utmost importance when the participant selection methods vary in respect to actual costs, work hours required, and types of results produced.

Within the public policy process, consistency and agreement are imperative for sound planning. These signals of stability in opinion are appropriate during the issue awareness and throughout every additional phase. Consistency among raters implies rank ordering that is the same although the weights may differ. Agreement is viewed as consensus regarding the weight or value of an issue area when judged by raters on a given scale. The desirability of obtaining agreement and consistency is not aimed at selecting biased samples of participants but is focused on obtaining participant groups that yield dependable information.

Determining Intragroup Consistency and Agreement

The previous section of this paper emphasized that the actual method which the policy analyst chooses for selecting participants to take part in a policy assessment will yield a distinct group of

participants. Since each method of participant selection is idiosyncratic and the development of empirical decision rules requires some criteria that can be applied if any combination of methods is used, a common unit of measurement analysis must be identified for comparative purposes.

One identifiable, common unit is a numerical rating scale (e.g. 1 to 16.). This type of scale measures the value of issues, programs, or policies to be assessed. The specific numerical input employed for comparing the different selection methods could be the participants' actual evaluation of an issue, the participants' projection of the desired level of functioning for the program policies, or the estimated modifications necessary for improvement of the program policies as derived from a relationship between the actual and desired characteristics. For the purpose of this article, the latter input will be employed for illustrative purposes.

Evaluation of the participants' perceptions of improving program policies or need for change has previously been addressed only scantly in the literature under the general rubric of reliability. While the examination of these data via the reliability approach is certainly better than complete neglect, reliability does not provide all the information about the data that are needed by policy analysts and administrators who must make sound policy decisions. Reliability coefficients computed from the obtained data only provide partial insight concerning the participants' perceptions of improvement. In fact, the participants' perceptions can vary in a number of ways for which the reliability measure is insensitive. Therefore, any methodology for evaluating the participants' perceptions must be sensitive to the different variations if the policy planner is to capitalize on the information available for decision making.

To visualize the extreme possibilities, we shall consider the hypothetical data as shown in Table II. There are four different situations reflecting ways in which a group of participants could differ with respect to different program policies. The numerical data within each matrix indicate the level of need for improvement as defined by the participants' input. The higher the absolute value of a numerical input, the higher the need for improvement with respect to the given program policies. Each column vector of a matrix represents a participants' assessed need for all the program policies under consideration. Each row vector of a matrix represents each program's level of need for improvement as assessed across all participants.

An examination of the first example in Table II reveals a situation which is optimal for the policy analyst conducting a needs assessment. One favorable aspect of the obtained data can be observed by an examination of the column vectors. Within each column vector, there is agreement between the relative standing of each program in respect to all other programs. Thus, each participant in the first example perceived the importance of the educational program policies as less than the importance of the public housing policies. Similarly, the importance of the public housing program was perceived as less than that of the environmental program policies. This factual degree of consistency denoted among the participants can be operationally defined in terms of intragroup consistency.

Another favorable aspect of the obtained data in the first example can be observed by an examination of the row vectors. This examination reveals complete agreement by all participants in connection with the absolute need for each program. While the various programs are perceived as having diverse levels of need, all participants noted an

TABLE II

HYPOTHETICAL DATA DESCRIBING FOUR DIFFERENT SITUATIONS OBTAINED FROM A POLICY ASSESSMENT PROGRAM

Program Policies on	Example 1 Participants				Example 2 Participants				Example 3 Participants				Example 4 Participants			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Education	1	1	1	1	1	5	9	13	1	2	2	1	1	2	3	4
Public Housing	2	2	2	2	2	6	10	14	2	1	1	3	2	3	4	1
Environmental Protection Agencies	3	3	3	3	3	7	11	15	3	4	3	2	3	4	2	1
Public Health	4	4	4	4	4	8	12	16	4	3	4	4	4	1	2	3

identical level of need per program. This singular level of need attached to a program among participants can be operationally defined as intragroup agreement. In the first example, the four participants exhibit perfect intragroup agreement, as well as intragroup consistency.

An examination of the second example in Table II reveals both similarities and differences from the first example. Initially, the second example is similar to the first in that it exhibits a high degree of intragroup consistency. Similarly, participants in the second example perceive need of one program relative to the other programs the same across all column vectors. However, differences relative to intragroup agreement appear between the two examples. The level of absolute need associated with any one program shows low intragroup agreement in example two. That is, in the extreme situation, the first participant perceived the level of need for change in the educational program policies as being much lower than the level of need for change as perceived by the fourth participant. Furthermore, the highest level of need for any program as perceived by the first participant is less than the lowest level of need as perceived by the other participants. Thus, a low intragroup agreement level is identified.

A problem for the policy analyst in the applied setting is shown in the second example. Since the data are characterized as having the low intragroup agreement, the analyst may have difficulty in determining the level of need for a program policy change. The uncertain need level would also weaken the justification for additional costs required to say exactly which policies are important via the assessment process. Therefore, the results of the needs assessment could be viewed by governing boards overseeing the evaluation process as a waste of time and effort.

The third example in Table II presents a situation that differs somewhat from the previously discussed examples. The degree of intragroup agreement is relatively high in the third example. Within each of the row vectors all the participants basically perceived the need of the program as similar. However, the degree of intragroup consistency is shown to be low. The need of one program relative to the other programs is different for each participant as can be observed by an examination of the column vectors.

In the third example we note a different problem for the policy analyst. The data can be described as having high intragroup agreement and low intragroup consistency. The researcher's difficulty would evolve around identification of the specific program with the greatest need. Even though the actual level of need for all the programs is basically the same across participants (high intragroup agreement), the order in which the programs are perceived is different (low intragroup consistency). In such a situation the policy analyst would be open to accusation by half the participants for asking advice without following the information received. This would be the situation regardless of the program area chosen for further work.

The fourth example in Table II illustrates the worst of all possible situations. The data in the fourth example can be categorized as being low in regard to both intragroup consistency and intragroup agreement. Not only did the participants disagree about the need of one set of program policies as compared to the others, they also disagreed about the absolute need for change in all areas. The actual identification and priority of any one program as compared to the other programs would be completely futile based upon the participants' inputs in the fourth example.

The obvious conclusion that we can draw from the discussion of the data in Table II is that the first example is the desired situation. In the applied setting it is highly unlikely that the policy planner would ever encounter data which are perfect in terms of both intragroup consistency and intragroup agreement. It is also unlikely that he/she would encounter data that are extremely low in terms of both intragroup consistency and intragroup agreement as depicted in the fourth example of Table II. What does exist within the applied setting are data somewhere between the first and fourth examples.

The nature of the variation among the inputs affects interpretation of the obtained data; thus, if the researcher is to optimize decisions about program policy changes, consideration must be given to both intragroup agreement and intragroup consistency. In oder to adequately utilize both of these concepts, the planner must operationalize them via a quantitative index. This index in its most elementary form consists of two correlation coefficients - one for consistency and one for agreement. To visualize the basis for the construct of the index, we should investigate the data matrices in Table II. These matrices shows rows that represent consistency and columns which exemplify agreement. As the multiple correlation coefficients approach "1" greater consistency and agreement result. Autocorrelation is the limiting factor in establishing a quantitative index as outlined here. Alternative approaches to this problem will be suggested later in this article.

The advantages of quantifying the concepts of intragroup agreement and intragroup consistency are numerous. One advantage of employing empirical indices is the ease with which large sample data can be evaluated. The hypothetical examples employing only four participants

evaluating four programs are relatively easy to evaluate visually. However, in the field setting where the number of program policies as well as the number of participants are increased, an adequate visual evaluation of the data is impossible. Thus, the use of indices becomes not only advantageous but essential.

Another advantage of employing empirical indices for evaluating the inputs obtained from participants in a policy study is that a priori decision rules can be established. The establishment of a priori rules for policy action permits the decision maker to justify giving certain responses more weight than others in the decision making process. Consequently, if some of the target groups do not show an acceptable degree of both intragroup consistency and agreement (concerning specific policy issues) then those groups' inputs should receive relatively little weight. By reducing the amount of weight given to groups without acceptable intragroup consistency and agreement, more meaningful action can be taken by policymakers than would be the case if all group inputs were treated equally. Not only would differential weighting produce more sound policy decisions, but the results obtained from the indices could provide planners with summary information relative to certain participant groups and how they view the need for change. Again, it should be emphasized that the criteria for group weighting are intragroup consistency and intragroup agreement rather than the positive or negative manner of viewing the programs. A sound decision concerning policy change can be made with either high or low intragroup consistency and agreement, but not with information that is characterized as being low in intragroup consistency and high in intragroup agreement and vice versa.

What is a sound decision? By what quantitative criteria and whose set of values are decisions made? To begin answering these questions we turn to the two components of consistency and agreement. Regarding the multiple correlation coefficients, an F ratio may be used to test whether either variable set is significantly different from "0". Thus, the decision maker has a quantitative criterion as a basis for decision. Obviously, the values of the raters were the primary components of the quantitative index. Now the values of the decision maker are applied. Although his/her values and actions may be influenced by various pressure groups, the decision is made. From this illustration we may infer that there is no such thing as a sound decision without noting that soundness is judged by the value sets of many individuals. This is, indeed, the case.

Still another advantage of employing empirical indices is that the general state of knowledge concerning issue assessment can be enhanced through the accumulation of results which detail the nature of inputs by different groups to specific policy issues. Armed with historical evidence concerning the idiosyncrasies of different groups, the policy analyst may optimize future issue assessments by choosing those selection strategies which would yield the greatest degree of consistency and agreement. The actual method chosen to select participants could be derived from the accumulated research employing indices. For example, the hypothetical indices in Table III reveal historial evidence of agreement and consistency among three participant selection paradigms and four public policy issue areas. To illustrate further, the best chance for the researcher to obtain consistency and agreement on educational issues would be to select participants from the significant group

TABLE III

Hypothetical Indices of Consistency and Agreement
By Classification and Issue

Issue Area	Reference Group	Sampling	Significant Group
Education	(.681)(.587)	(.523)(.693)	(.821)(.7314)
Public Housing	(.521)(.499)	(.522)(.473)	(.523)(.503)
Environmental	(.479)(.566)	(.833)(.699)	(.528)(.498)
Public Health	(.433)(.784)	(.824)(.822)	(.627)(.774)

classification. On the other hand, it does not matter which classification is used to assess the public housing issue.

Calculation of the indices for intragroup agreement and intragroup consistency is not a straightforward process with data obtained in the field setting. Since the number of persons and the number of programs in our example are equal and comprise an extremely small sample space, we have not defined mathematical terms or the formulae other than multiple correlation coefficients necessary to calculate the indices for complex situations. If an actual data set had been employed, rather than the hypothetical data set, the clarity of the examples would have been less, thus, obscuring the full potential these indices offer. Since the purpose of this article was to illustrate a novel way of analyzing issue assessment data regarding selecting participants, it was decided to error in the former direction rather than the latter. That is, the examples were oversimplified to make the point.

In the applied setting, the fundamental issue to be resolved when calculating the indices is a determination of the level of measurement which characterizes the participants' assessed inputs. For the majority of issue analysis, the measurement decision will involve choosing between either an ordinal or assumed interval level of measurement. If the data are characterized as ordinal then the reader is referred to Lawlis and Lu (1972) and Finn (1972) for the formulae of intragroup consistency and intragroup agreement, respectively. On the other hand, if the data are characterized as an interval level of measurement, then the reader is referred to Bartko (1976), Burdock, Fleiss, and Hardesty (1973) for formulae of intragroup consistency and intragroup agreement respectively.

Conclusion

A review of the literature addressing needs assessment revealed the popularity of the technology as a tool in many situations. One researcher viewed needs assessment as an integral part of all policy planning (Kaufman, 1972). Other researchers suggested that needs assessment is absolutely fundamental to any evaluation (Scriven and Roth, 1978). Still other researchers emphasized political and motivational benefits (Ingersol, 1976) that can be derived from employing issue assessment.

In view of the popularity and likelihood for continued use of this policy assessment technique, further research is needed to better understand the intricateness of this technology. The avenue of investigation suggested in the current article entails viewing needs or issue assessment as a process. Four phases were identified, and the specific phases addressed here were participant selection and the evaluation of the participant's input in terms of consistency and agreement.

Earlier studies approached the problem of participant selection via different selection paradigms, yet not even an empirical link exists between an issue area and the participants' input. Without evidence of input evaluation, the choice of one selection paradigm over another paradigm is at best questionable. However, through accumulated research employing the intragroup indices suggested, practitioners would be able to choose the selection strategy expected to yield a high level of agreement and consistency. Also the numerical indices would provide the practitioner with data that would justify differential weighting of certain groups' inputs. For example, intragroup indices would reveal agreement and consistency among pressure

groups and issue areas. From these, the policy researcher would have a measure of the degree of seriousness concerning needed policy changes.

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